



# National Transportation Safety Board

## Collision Between Pickup Truck with Trailer and Group of Motorcycles Randolph, New Hampshire

Randolph, New Hampshire  
June 21, 2019

1

1

## Virtual Board Meeting Staff Participants

- |                      |   |
|----------------------|---|
| • Rob Molloy, PhD    | Director, Office of Highway Safety (OHS)          |
| • Ensar Becic, PhD   | Project Manager (OHS)                             |
| • Kenneth Bragg      | Investigator-in-Charge (OHS)                      |
| • Dennis Collins     | Human Performance Factors (OHS)                   |
| • Michael Fox        | Motor Carrier Factors (OHS)                       |
| • Ronald Kaminski    | Survival Factors (OHS)                            |
| • Brian Bragonier    | Vehicle Factors (OHS)                             |
| • Bob Squire         | Technical Reconstruction (OHS)                    |
| • Dan Walsh          | Highway Factors (OHS)                             |
| • Mary Pat McKay, MD | Medical Officer, Office of Research & Engineering |

2



2

## Virtual Board Meeting Staff Participants

- Doline Hatchett      Director, Office of Safety Recommendations and Communications (SRC)
- Casey Blaine      Deputy Director, General Counsel
- James Ritter      Director, Research and Engineering
- Julie Perrot      Safety Recommendations (SRC)
- Steve Blackistone      Government Affairs (SRC)
- Mark Bagnard      Visuals (OHS)
- Kristin Poland, PhD      Acting Report Development Chief\* (OHS)
- Monica Mitchell      Report Editor (OHS)

\*Dr. Poland is Deputy Director for OHS and serving as the Chief of the Report Development Division

3



3



**National  
Transportation  
Safety Board**

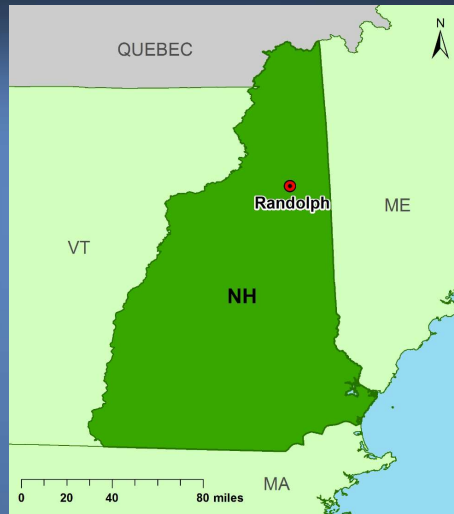
Randolph, New Hampshire  
June 21, 2019

Kenneth Bragg  
Investigator-in-Charge

4

4

## Crash Location

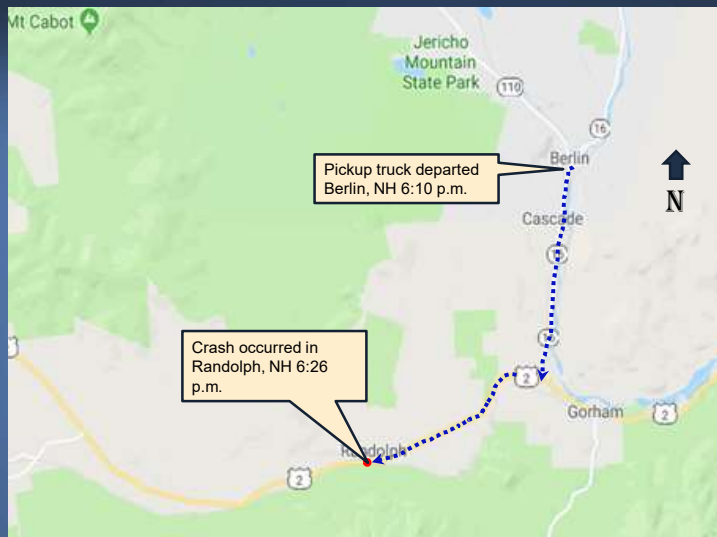


5



5

## Route Overview

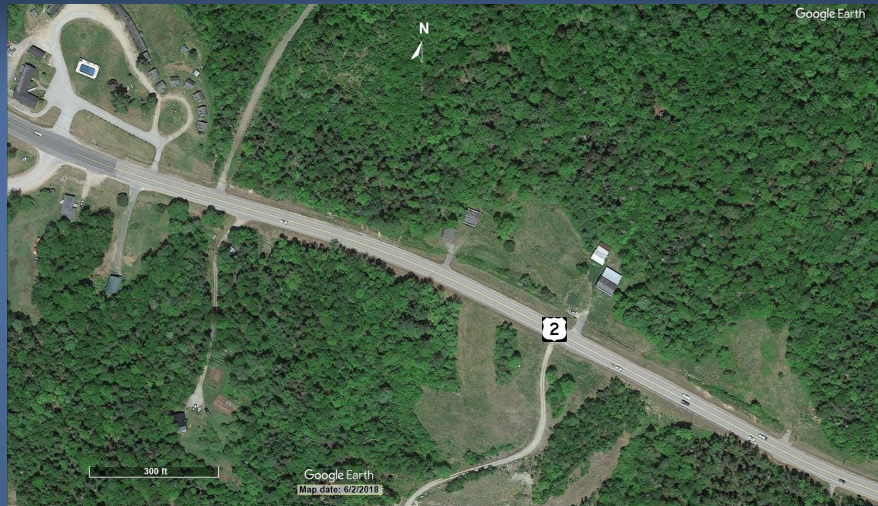


6



6

## Crash Location



7



NTSB

7

## Crash Location



8



NTSB

8



## Crash Location



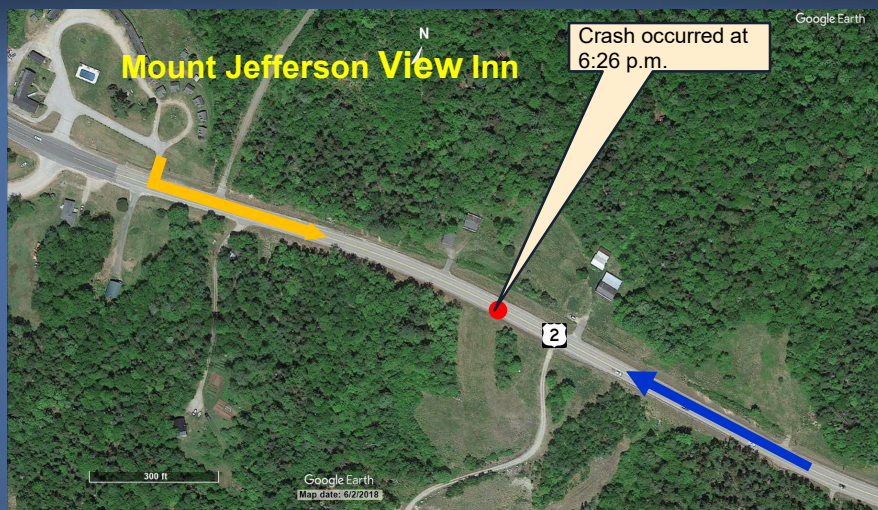
9



NTSB

9

## Crash Location



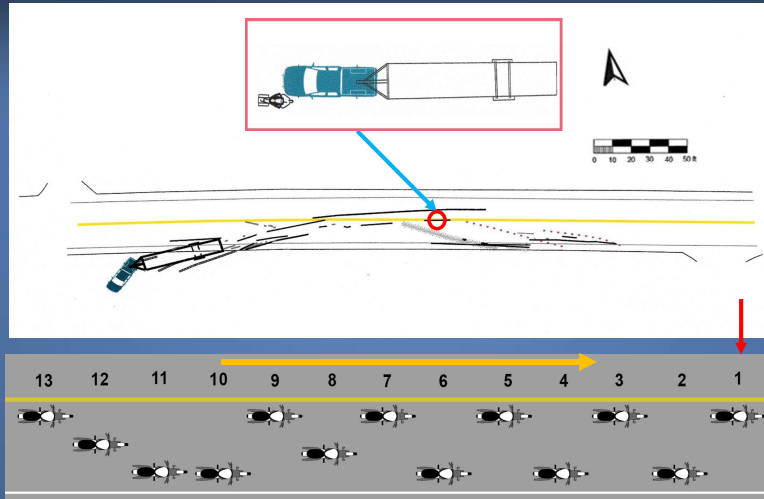
10



NTSB

10

## Crash Sequence

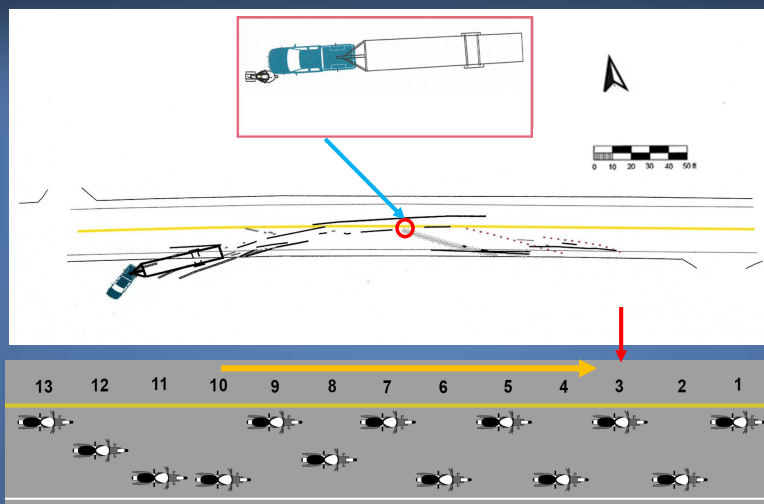


11



11

## Crash Sequence

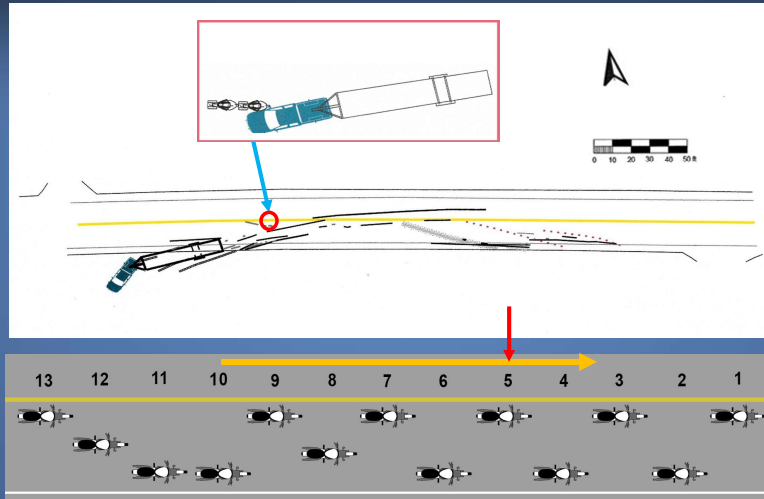


12



12

## Crash Sequence

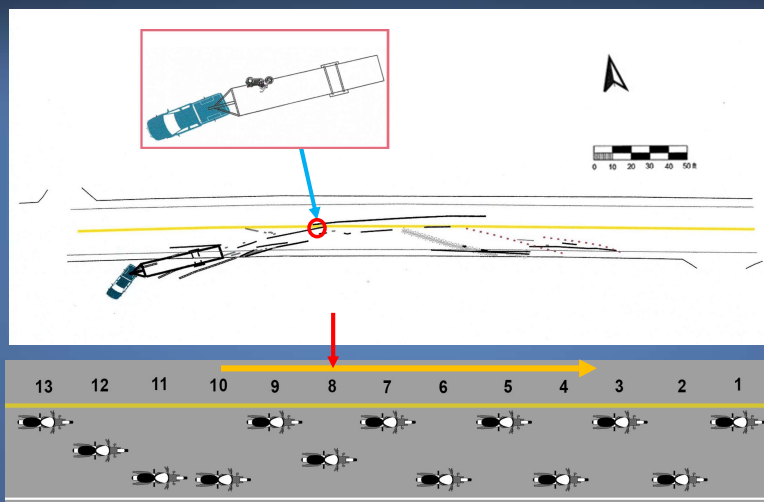


13



13

## Crash Sequence

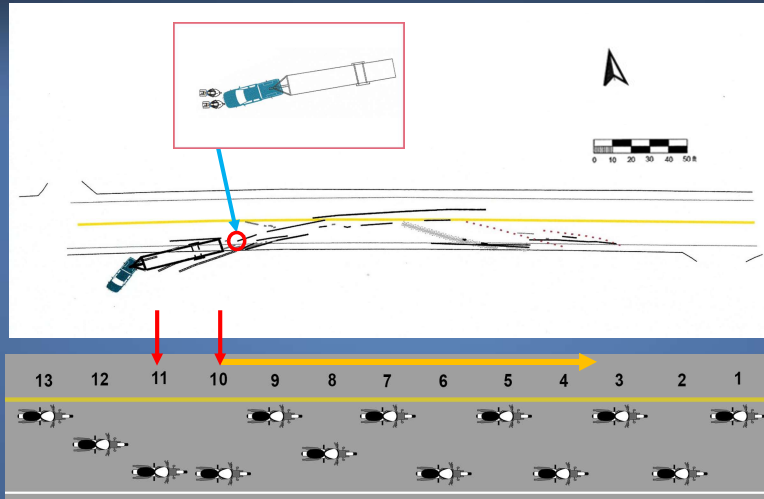


14



14

## Crash Sequence



15



15

## Final Rest



Source: New Hampshire State Police

16



16



## Injuries

- Motorcycle Riders
  - 5 fatal
  - 1 serious
  - 4 minor
- Motorcycle Passengers
  - 2 fatal
  - 2 minor
- Pickup Truck Driver
  - none

17



17

## On-Scene Staff

- Kenny Bragg, Investigator-in-Charge
- Dennis Collins, Human Performance
- Mike Fox, Motor Carrier Factors
- Ron Kaminski, Survival Factors
- Brian Bragonier, Vehicle Factors
- Peter Knudson, Public Affairs
- Katherine Chisom, Transportation Disaster Assistance

18



18

## Report Development Staff

- Ensar Becic, PhD, Project Manager
- Monica Mitchell, Report Editor
- Julie Perrot, Safety Recommendations
- Robert Squire, Technical Reconstruction
- Dan Walsh, PE, Highway Factors
- Mary Pat McKay, MD, Medical Factors

19



19

## Parties to the Investigation

- New Hampshire State Police
- Federal Motor Carrier Safety Administration
- USDOT, Office of the Inspector General

20

NTSB

20

## Safety Issues

- Deficiencies in out-of-state driver's license notification processing
- Insufficient federal oversight of motor carriers
- Shortcomings in motorcycle rider safety

21



21

## Staff Presentations

- Operator Actions
- Interstate Communication about License Suspension
- Federal Oversight of Motor Carriers
- Motorcycle Helmet Safety
- Motorcycle Rider Safety

22



22



# National Transportation Safety Board

## Human Performance Factors

### Operator Actions

### Interstate Communication about License Suspension

Dennis J. Collins

23

23

## Overview

- Excluded human performance factors of the driver
- Pickup driver's
  - Actions and statements
  - Substance abuse
  - Fatigue
- Interstate communication about license suspension

24



NTSB

24



## Excluded Factors

- Pickup truck driver's experience
- Cell phone distraction
- Weather – fair, good visibility, dry roadway

25



25

## Pickup Truck Driver's Actions

- Evidence of wheel on centerline
- Claimed reaching for a drink caused drift (not consistent with several witness reports about erratic driving throughout day and just before crash)
- Voluntarily provided blood sample

26



26

## Pickup Truck Driver's Statements

- Driver arrested three days after crash; told police about history of heroin/cocaine use
- Used heroin and cocaine the morning of crash
- Was feeling effects of drugs and used caffeine to take edge off before the crash

27



NTSB

27

## Pickup Truck Driver's Substance Abuse

- Toxicology showed multiple drugs & metabolites
- Levels indicate use within 12 hours
- Centerline crossing most likely due to impairment from the multiple drugs
- Determining specific effects of individual drugs not possible

28



NTSB

28

## Pickup Truck Driver's Fatigue

- Information from multiple sources
- 6/18/19 - little opportunity for rest
- 6/19/19 - 8 hours, poor quality rest
- 6/20/19 - 7.5 hours to rest
- Effect of fatigue unclear given drug use



29



29

## Revocation of Connecticut Driving Privileges

- Driver stopped May 11, 2019 (45 days)
- Refused urine drug test
- Refusal triggered Connecticut suspension
- Connecticut sent electronic notice to Massachusetts on May 29, effective June 10
- Paper notice also sent to Massachusetts

30



30

## Out-of-State Sanctions in Massachusetts

- Suspended/revoked/canceled in another state = revoked in Massachusetts
- License should have been revoked June 10, 2019 until at least July 25, 2019
- Connecticut notices were not processed, pickup truck driver's license NOT revoked

31



31

## Massachusetts RMV Audit and Review

- Electronic notice
  - Received by Massachusetts software (ATLAS) May 29, 2019
  - ATLAS could not process future dates
  - Diverted into a queue; queue never monitored or processed
  - 365 e-notices, 3 not resolved by other means, only this driver was automatic revocation

32



32



## Massachusetts RMV Audit and Review

- Paper notice
  - Received June 4, 2019
  - No paper notification processing since 2013
  - Tens of thousands of unprocessed notices
  - Suspended more than 5000 licenses
  - Was a known problem



33



33

## Massachusetts RMV Systemic Deficiencies

- Failure to process notifications for years means systems were ineffective
- Effective systems = revoked licenses
- Systemic deficiencies and inaction resulted in failure to suspend thousands of licenses, many noncommercial

34



34

## Massachusetts Actions After Audit/Review

- Modified ATLAS to process future dates
- Created Out-of-State (OOS) Unit to handle all out-of-state notifications
- Created workflow for notifications
- Assigned specific personnel to notifications
- Required daily status updates to management

35



35

## Massachusetts Actions After Audit/Review

- Changes made represent progress
- If maintained, should reduce likelihood of drivers incorrectly retaining MA licenses
- Massachusetts DOT should regularly evaluate RMV's processing of all out-of-state notifications

36



36

## Notification Issues Are Widespread

- Rhode Island – 22,500+ not reported to MA
- New Hampshire – 3,852 (7 CDL) suspended
- Reported issues in at least six jurisdictions
- Improved communication will improve safety
- Jurisdictions should perform review of incoming/outgoing notice processes

37



37

## Summary

- Pickup driver
  - Excluded experience, cell phone use
  - Fatigue effect undetermined
  - History of drug use, drugs in system
  - Crossing centerline most likely the result of impairment from use of multiple drugs

38



38

## Summary

- Massachusetts Registry of Motor Vehicles
  - Should have revoked the pickup driver's license
  - Was not properly processing notifications
  - Changes represent progress, monitoring needed
- General
  - Issues not limited to Massachusetts; other jurisdictions should examine their processes

39



NTSB

39



**National  
Transportation  
Safety Board**

## Federal Oversight of Motor Carriers

Michael Fox

40

40



## Overview

- Westfield Transport operations
  - Precrash
  - Postcrash compliance review (CR)
- FMCSA oversight of motor carriers
  - Oversight of Westfield Transport
  - Use of imminent hazard orders
- FMCSA oversight of electronic logging device (ELD) providers

41



41

## Westfield Transport Precrash History

- Started operations in July 2016 as automobile hauler
  - 1 vehicle, 1 driver
- Exited FMCSA's new entrant program in January 2018
- At time of crash
  - 8 vehicles and 12 drivers
  - 3 alerts in BASIC
  - Classified as moderate-risk by the FMCSA

42



42

## Postcrash Investigation of Westfield Transport

- FMCSA compliance review
  - Carrier was noncompliant with regulations
  - 25 violations: 4 acute, 3 critical, 18 additional
  - Unsatisfactory safety rating
- Additional deficiencies
  - Carrier did not have drug testing program, safety plan, written policies, driver training
  - Owner lied and tampered with ELDs

43



43

## Carrier's Inadequate Oversight of Drivers

- Accident driver
  - Incomplete driver qualification (DQ) files: missing background check, accident history
- Other drivers
  - Incomplete DQ files
  - Using a driver with revoked CDL
  - Tampered with ELDs / 28 of 150 examined logs falsified

44



44

## FMCSA Oversight of Westfield Transport

- Postcrash investigation revealed a carrier without regard for safety
  - How did the carrier reach that point?
- FMCSA oversight during different segments of carrier's life
  - During the new entrant period (increased scrutiny)
  - After the new entrant period (standard oversight)

45



45

## FMCSA Oversight of Westfield Transport

New entrant:  
July 2016 –  
January 2018

Exited program:  
January 2018

February 2019: →  
Moderate-risk

| Period                       | Vehicles | Roadside Inspections | OOS Violations | BASICs in Alert |
|------------------------------|----------|----------------------|----------------|-----------------|
| 18 months (new entrant)      | 1-2      | 7                    | 2              | 0-1             |
| 13 months (post-new entrant) | 2-11     | 31                   | 15             | 1-2             |
| 5 months (post-new entrant)  | 8        | 17                   | 8              | 3               |
|                              |          |                      |                |                 |

46



46

## Oversight of Recent New Entrant Graduates

- One-third of motor carriers do not complete the new entrant program
- Same level of oversight for recent graduates and long-standing carriers
  - Dramatic increase in inspections and violations
- Stronger oversight of recent graduates of new entrant program is necessary

47



47

## Reincarnated Motor Carriers

- Westfield Transport had 21 affiliations with other carriers
- Avoid and elude FMCSA = reincarnated carrier
- Other Westfield Transport affiliations
  - DAKS Express – place of business associated with accident driver but lived in Florida and maintained fleet in Florida
  - East2West Transport – driver now owner, 1 shared driver, and using 6 of Westfield's vehicles

48



48



## Westfield Transport Imminent Hazard Order

- FMCSA investigator initiated imminent hazard paperwork, but the FMCSA did not issue the IH order
- IH orders remove unsafe carriers and prevent reincarnation
- FMCSA stated IH standard was not met and none of the discovered violations impacted the June 21 crash
- Carrier's actions did directly impact the crash

49



49

## Imminent Hazard Orders

- Previous NTSB recommendation about IH orders
  - Naperville, IL, H-16-1; no progress on implementation
- In recent years, the FMCSA has inconsistently and rarely used IH orders

|  | Year              |      |      |      |      |      |      |      |      |      |      |      |      |
|--|-------------------|------|------|------|------|------|------|------|------|------|------|------|------|
|  | 2000<br>–<br>2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 |
| <b>IH<br/>Order</b>  | 14 <sup>a</sup>   | 9    | 2    | 15   | 43   | 32   | 11   | 6    | 7    | 3    | 1    | 0    | 0    |
| <sup>a</sup> Only passenger- and hazardous-material motor carriers were issued IH orders during 2000–2008. The orders in the subsequent years were issued to all types of carriers, including freight. |                   |      |      |      |      |      |      |      |      |      |      |      |      |

50



50

## Oversight of ELD Providers

- ELDs designed to be accurate and tamperproof
- KeepTruckin ELDs – Westfield Transport able to easily tamper and falsify
- Thoreau, New Mexico, also tampered with the KeepTruckin device
- Remove KeepTruckin from approved list
- Revise the process for ELDs to become approved

51



51

## Summary

- Westfield Transport operated without regard for safety
- FMCSA oversight for Westfield was inadequate
- Proposed recommendations would strengthen FMCSA's oversight of recent new entrant graduates and ELD providers

52



52



# National Transportation Safety Board

## Motorcycle Helmet Safety

Ronald Kaminski

53

53

## Overview

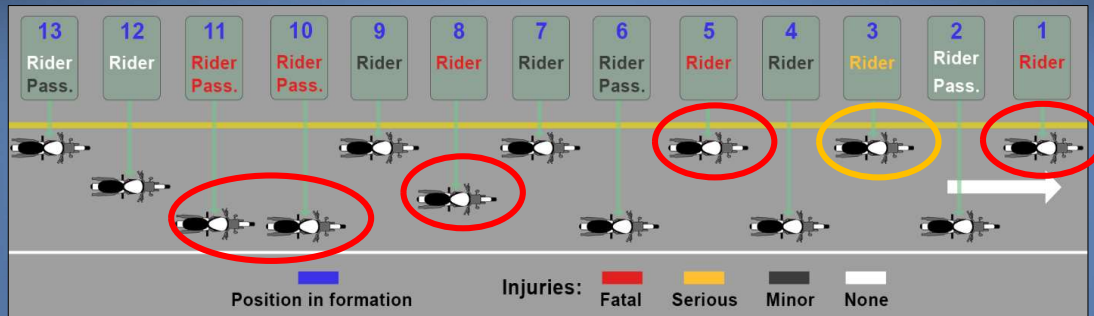
- Injuries to riders and passengers
- Motorcyclists' helmet use
- FMVSS 218 – motorcycle helmet standards
- Benefits of USDOT-compliant helmets
- Previous motorcycle helmet recommendations

54



54

## Injuries



- 23-year-old pickup truck driver was uninjured

55



## Formation's Helmet Use

- Of the 18 motorcyclists
  - 12 were wearing USDOT-compliant helmets
  - 1 was wearing a non-compliant helmet
  - Lead rider was most likely not wearing any helmet
  - Helmet use for 4 is unknown
- New Hampshire does not require helmet use

56



## Formation's Helmet Use

- Of the 7 motorcyclists who died
  - 3 were wearing USDOT-compliant helmets
  - Helmet use for 3 is unknown
  - Lead rider not protected
- Six motorcycles—carrying 8 motorcyclists—were directly struck by the combination vehicle
  - Only one of those riders survived, with serious injuries

57



57

## Benefits of USDOT-Compliant Helmets

- NHTSA's analysis
  - Helmets are 37% effective for riders and 41% effective for passengers
- NHTSA estimated that USDOT-compliant helmets saved 1,872 lives in 2017
  - Another 749 lives could have been saved with all motorcyclists helmeted

58



58



## Helmet Use and State Laws

- Nationally, USDOT-compliant helmet use in 2019 was 71%
- 18 states and Washington D.C. have mandatory universal helmet-use laws
  - Helmet use is 89%
- 29 states have partial helmet-use laws; 3 states have no helmet-use laws
  - Helmet use drops to 56%

59



59

## Motorcycle Helmet Safety

- NTSB Motorcycle Safety Forum (2006)
  - Issued 3 recommendations to require universal helmet laws in all states
  - Specification for USDOT-compliant helmets
- High fatality rate persists since the issuance of the recommendations: 4,985 died in 2018
- Due to lack of progress on these recommendations, renewed focus is needed

60



60

## Summary

- USDOT-compliant helmets have been shown to provide the best protection for motorcyclists
- Reiterate Safety Recommendations H-07-38 through -40
- USDOT-compliant helmets can save lives, but only when used

61



61



**National  
Transportation  
Safety Board**

## Motorcycle Rider Safety

Brian Bragonier

62

62

## Overview

- Motorcycle antilock braking systems (ABS)
- NHTSA's ABS regulations and performance standards
- Motorcycle rider safety
  - Impairment
  - Spacing

63



63

## Motorcycle Antilock Braking Systems

- Motorcycles have reduced stability at low speeds or during wheel lock-up
- ABS improves stability by preventing wheel lock-up
  - 109% increase in crash risk without ABS

64



64

## Motorcycle Antilock Braking Systems

- Four involved motorcycles equipped with ABS
- Two riders stated they believed ABS helped them stop in a controlled manner
- Likely aided riders in performing emergency braking during crash sequence

65



65

## NHTSA's ABS Performance Standards

- NHTSA does not require ABS on motorcycles
  - Federal Motor Vehicle Safety Standard (FMVSS) 122 specifies ABS performance requirements
- NTSB has issued a safety recommendation to NHTSA to require motorcycle ABS
  - Classified "Open – Unacceptable Response"

66



66

## Motorcyclist Alcohol Use

- Alcohol + motorcycles = higher risk
- In 2016, a quarter of all motorcycle rider fatalities had BAC over 0.08g/dl
- Alcohol use increases response time

67



67

## Motorcyclist Alcohol Use

- Four of six riders tested were positive for alcohol
- Lead rider above New Hampshire *per se* limit of 0.08 g/dL
- Lead rider impaired, undetermined effect
- Unlikely that other riders could have avoided the oncoming pickup truck

68



68



## Motorcycle Spacing

- Staggered formation
  - Left and right column within the lane of travel
  - 2-second following distance between riders on the same side of formation
- Involved riders entered roadway just prior to crash
  - No time to develop formation and spacing

69



NTSB

69

## Motorcycle Safety

- National Association of State Motorcycle Safety Administrators and the Motorcycle Safety Foundation
  - Inform members about this crash
  - Safety benefits of ABS-equipped motorcycles, unimpaired riding, spacing, and USDOT-compliant helmets

70



NTSB

70

## Summary

- ABS is a proven safety system
- Never ride after consuming alcohol
- Maintain proper following distance
- Always wear a USDOT-compliant helmet

71



NTSB